



Exposure to fine particulate pollution association with disruption of glucose and cholesterol levels.

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Responders to the 9/11 terrorist attack on the World Trade Center

- *Extreme exposure to toxic dust cloud.
- *Long-term ambient air pollution exposure.



Exposures:

- * **Six-month average PM2.5** exposure from a highly resolved spatiotemporally model.
- * **WTC-related exposure** is collected through a questionnaire and incorporates exposure length and intensity. Divided into three groups.

Outcomes:

- * Repeated measures of blood **glucose** (N=82015), and **cholesterol** (N=96155) tests.

Models:

- * BAM with socioeconomic and health-related covariates.




Percent change in glucose or total cholesterol associated with WTC exposure index and IQR change of six-month average PM2.5 exposure.

Exposure	Percent change (95% CI)	
	Glucose (N=82015)	Cholesterol (N=96155)
PM2.5 6-month average	0.53 (0.16 ; 0.9) **	0.82 (0.46 ; 1.18) ***
WTC low	<i>reference</i>	<i>reference</i>
WTC medium	0.31 (-0.09 ; 0.71)	0.51 (0.14 ; 0.87) **
WTC high	0.63 (0.16 ; 1.1) **	0.05 (-0.37 ; 0.48)

p-values: . < 0.1; * <0.05; **< 0.01; ***<0.0001



Conclusions:

- * Long-term pollution increases glucose and cholesterol levels. Consistent with existing literature.
 - * Extreme pollution (WTC exposure) is associated with glucose profile disruption later in life. However, diabetes is not a WTC certifiable condition.
 - * Interaction between exposures did not yield consistent results and needs to be further explored.
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THANKS!

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